

TABLE 3.—Maximum free-air wind velocities (m. p. s.), for different sections of the United States based on pilot balloon observations during May 1941

Section	Surface to 2,500 meters (m. s. l.)				Between 2,500 and 5,000 meters (m. s. l.)				Above 5,000 meters (m. s. l.)						
	Maximum velocity	Direction	Altitude (m) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m) m. s. l.	Date	Station
Northeast <sup>1</sup>	42.0	NW	2,000	24	Harrisburg, Pa.	44.0	NW	5,000	26	Caribou, Maine	64.2	NNE	10,880	20	Portland, Maine.
East-Central <sup>2</sup>	32.9	SSW	420	21	Norfolk, Va.	47.2	WNW	4,890	9	Raleigh, N. C.	46.0	N	12,940	18	Louisville, Ky.
Southeast <sup>3</sup>	27.2	E	620	26	Miami, Fla.	42.5	NNW	5,000	13	Montgomery, Ala.	65.5	W	13,080	11	Tampa, Fla.
North-Central <sup>4</sup>	37.4	S	1,780	23	Rapid City, S. Dak.	35.4	WNW	2,820	8	Huron, S. Dak.	70.8	WNW	9,990	7	Rapid City, S. Dak.
Central <sup>5</sup>	42.1	W	2,500	8	Des Moines, Iowa	56.0	WNW	3,090	8	Des Moines, Iowa	64.0	WNW	11,290	7	Wichita, Kans.
South-Central <sup>6</sup>	42.8	S	1,900	19	Amarillo, Tex.	49.4	S	2,990	19	Amarillo, Tex.	38.0	NW	5,770	12	Jackson, Miss.
Northwest <sup>7</sup>	41.4	W	2,500	5	Pendleton, Oreg.	41.7	W	2,520	5	Pendleton, Oreg.	56.5	WNW	6,850	7	Billings, Mont.
West-Central <sup>8</sup>	37.5	WNW	2,290	6	Cheyenne, Wyo.	50.6	NNW	4,600	18	Sacramento, Calif.	66.5	NNW	10,930	18	Redding, Calif.
Southwest <sup>9</sup>	38.7	ESE	1,850	21	Albuquerque, N. Mex.	42.0	NNW	4,170	4	Sandberg, Calif.	60.3	N	9,020	19	Las Vegas, Nev.

<sup>1</sup> Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and northern Ohio.

<sup>2</sup> Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennessee, and North Carolina.

<sup>3</sup> South Carolina, Georgia, Florida, and Alabama.

<sup>4</sup> Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.

<sup>5</sup> Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.

<sup>6</sup> Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except extreme west Texas), and western Tennessee.

<sup>7</sup> Montana, Idaho, Washington, and Oregon.

<sup>8</sup> Wyoming, Colorado, Utah, northern Nevada, and northern California.

<sup>9</sup> Southern California, southern Nevada, Arizona, New Mexico, and extreme west Texas.

## WEATHER ON THE NORTH ATLANTIC OCEAN

By H. C. HUNTER

**Atmospheric pressure.**—The average pressure during May 1941, over those portions of the North Atlantic Ocean which are adequately covered by available reports was not far from normal. A moderate excess was evident over the southeastern area and a small excess over the northern and eastern Gulf of Mexico, but on the other hand there was a considerable deficiency over waters near the coasts of Newfoundland, the Maritime Provinces, and New England.

The extremes of pressure in the vessel reports received were 1,035.2 and 970.5 millibars (30.57 and 28.66 inches). The high mark was noted on the American liner *Exeter* near 36° N., 36° W., late on the evening of the 22d. The low reading was reported by the U. S. Coast Guard cutter *General Greene*, near 48° N., 52° W., during the early afternoon of the 30th.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, May 1941

Station	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Millibars	Millibars	Millibars		Millibars	
Lisbon, Portugal	1,017.2	+2.3	1,031	3	1,004	17
Horta, Azores	1,023.1	+1.8	1,035	23	1,012	15
Belle Isle, Newfoundland	1,008.8	-3.4	1,027	14	986	31
Halifax, Nova Scotia	1,010.5	-4.4	1,025	28	993	18
Nantucket	1,012.2	-3.4	1,024	21	996	17
Hatteras	1,016.3	0.0	1,030	25	1,003	17
Turks Island <sup>1</sup>	1,015.6	-0.3	1,020	27, 28	1,006	1
Key West	1,015.9	+1.0	1,022	28	1,010	8
New Orleans	1,016.6	+1.7	1,023	15	1,006	6

<sup>1</sup> For 27 days.

NOTE.—All data based on available observations, departures compiled from best available normals related to time of observation, except Hatteras, Key West, Nantucket, and New Orleans, which are 24-hour corrected means.

**Cyclones and gales.**—The month seems to have been quieter over the North Atlantic than May usually is. The first 5 days and the final 8 included practically all the gales of note. In the entire month there were two whole gales (force 10) reported, but no storm of greater severity.

The earlier whole gale was met on the 15th by the Coast Guard cutter *Mojave*, which was at the time to southeastward of Nantucket. The later was encountered not far

to eastward of Newfoundland on the 30th by the cutter *General Greene*. There had been a well-developed low over that part of the North Atlantic, shifting its position somewhat, for several days and it was joined on the 30th by a small-area vigorous cyclone which had developed over New York and New England early in the night of the 28th-29th and had advanced northeastward to beyond Newfoundland. It was at this time that the lowest known barometer reading of the month over the North Atlantic was noted, as mentioned above.

**Duststorm.**—The Hydrographic Bulletin of June 4 has a report of a duststorm near the North Carolina coast. The period, in ship's time, was approximately from midnight to dawn of the 18th.

From 0500 to 0900 G. C. T. on May 18, 1941, while steaming from a position off Cape Lookout Shoals Lighted Whistle Buoy 14 toward Frying Pan Shoals Lightship, a duststorm was encountered. The wind was westerly and the barometer was low (29.66 inches at midnight). At daybreak the bulkheads, booms, decks, etc., were found to be covered with fine brown dust that made little rivers of mud when being washed off with the deck hose.

**Fog.**—Somewhat less fog came to notice than during April just preceding. Particularly for the Gulf of Mexico and the waters just to eastward of the South Atlantic States, which had seen considerable April fog, there was none whatever reported in May except to northward of Cape Hatteras.

Between Capes Hatteras and Cod there was a marked decrease in amount of fog noted, the May dates for this strip being largely before the 12th. To eastward and northeastward of Cape Cod, as far as the eastern limits of Nova Scotia, May fog reports exceeded those for April. The period from the 7th to 11th is indicated as the foggiest part of May over these waters. The 5° square, 40° to 45° N., 65° to 70° W., furnished reports for 8 days.

The square, 40° to 45° N., 45° to 50° W., well to eastward of the American continent, is known to have had fog on 8 days, all during the middle decade of the month. These two squares just mentioned led all North Atlantic areas in reports of fog furnished.

When the fog conditions of previous Mays are compared with this year's showing, it appears that there was decidedly less than normal this year over waters just to eastward of the Middle Atlantic and New England States, but the absence of May fog near the coast from Hatteras to the Rio Grande is the usual condition.

## OCEAN GALES AND STORMS, MAY 1941

Vessel	Voyage		Position at time of lowest barometer		Gale began, May	Time of lowest barometer, May	Gale ended, May	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Direction and highest force of wind	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN													
Gulfhawk, Am. M. S.	Las Piedras, Venezuela.	New York.	27 24 N.	74 18 W.	1 20	4a, 1.		1,010.2	NE	NE, 7.	NNE	ENE, 8.	
Algic, Am. S. S.	Trinidad.	Boston.	37 26 N.	69 00 W.	2	4p, 2.		31,005.4	NNE	NNE, 5.	NE	NE, 8.	None.
Gulfdawn, Am. S. S.	Port Arthur.	Philadelphia.	30 48 N.	79 30 W.	3	7p, 2.		31,010.5	ENE	SSW, 4.	ENE	NE, 8.	SSW-W.
Nagara Maru, Jap. M. S.	Cristobal.	New York.	31 43 N.	74 03 W.	3	6a, 3.		31,004.7	N	W, 4.	N	N, 8.	W-N.
Spencer, U. S. C. G.	On station No. 2.		38 12 N.	45 30 W.	2	9a, 3.		3,993.6	E	SSW, 7.	NNW	E, 9.	SE-SSW-NW.
Argentina, Am. S. S.	New York.	Rio de Janeiro.	1 24 N.	38 06 W.	2	3p, 3.		31,009.1	E	ENE, 8.	NE	ENE, 8.	
Mojave, U. S. C. G.	On station No. 1.		39 30 N.	58 54 W.	4	7a, 4.		4,993.6	S	S, 8.	WSW	S, 8.	S-SW.
Spencer, U. S. C. G.	On station No. 2.		38 36 N.	45 42 W.	5	2p, 5.		51,002.0	SE	S, 8.	WSW	SE, 9.	SE-SSW.
Spencer, U. S. C. G.	On station No. 2.		38 18 N.	46 30 W.	7	5a, 7.		71,006.4	S	SW, 8.	WNW	SW, 8.	S-SW.
Mojave, U. S. C. G.	Newport.	Station No. 1.	39 12 N.	66 24 W.	14	1a, 15.		151,006.4	N	NW, 6.	WNW	NW, 10.	NNW-NW.
Hamilton, U. S. C. G.	Norfolk.	Station No. 2.	36 42 N.	69 12 W.	18	1p, 17.		181,004.4	WSW	SW, 3.	WSW	WSW, 8.	None.
Tampa, U. S. C. G.	On station No. 1.		39 13 N.	59 18 W.	24	2a, 25.		251,011.5	S	SSW, 8.	SSW	SSW, 8.	SSW-WNW.
Tampa, U. S. C. G.	On station No. 1.		39 18 N.	59 18 W.	26	2a, 27.		271,018.0	SW	WSW, 9.	WNW	WSW, 9.	SW-WNW-ENE.
General Greene, U. S. C. G.	Ice patrol.		52 43 N.	44 29 W.	28	10a, 28.		291,002.4	WSW	SW, 7.	WSW	WSW, 8.	SSW-WSW.
Tampa, U. S. C. G.	On station No. 1.		39 42 N.	61 12 W.	29	5p, 29.		301,001.4	W	WNW, 9.	NNW	NW, 9.	WSW-NW.
Hamilton, U. S. C. G.	On station No. 2.		38 54 N.	45 54 W.	30	9a, 30.		301,005.8	SSW	WSW, 8.	S	SSW, 8.	S-SW.
General Greene, U. S. C. G.	Ice patrol.		48 02 N.	51 51 W.	30	2p, 30.		30,970.5	S	NNW, 5.	W	ENE, 10.	ENE-NW.
NORTH PACIFIC OCEAN													
President Coolidge, Am. S. S.	Yokohama.	Honolulu.	35 05 N.	151 30 E.	1 30	12p, 30 <sup>1</sup> .		2,989.2	E	W, 5.	NNW	W, 11.	S-W.
A vessel.	Los Angeles.	Vladivostok.	40 42 N.	169 42 E.	2	2a, 2.		2,995.3	E	ENE, 6.	N	NE, 9.	E-NE.
Satartia, Am. S. S.	Catubangan, P. I.	Los Angeles.	41 42 N.	149 00 W.	2	10p, 2.		3,991.9	SSE	SSW, 5.	WSW	WSW, 9.	S-SW.
Aurora, Am. M. S.	Los Angeles.	Vladivostok.	45 15 N.	153 05 E.	3	2p, 3.		31,004.1	SSW	SW, 9.	SW	SW, 9.	SSW-SW.
Coldbrook, Am. S. S.	Yokohama.	Vancouver, B. C.	49 30 N.	131 30 W.	3	4p, 4.		3,990.9	SSE	SSE, 6.		ESE, 8.	
Pioneer, U. S. C. & G. Survey.	San Francisco.	Dutch Harbor.	45 06 N.	134 30 W.	4	3p, 4.		5,993.9	SW	W, 7.	W	WSW, 9.	SW-W.
J. A. Moffett, Am. S. S.	do.	Seward.	46 54 N.	130 00 W.	4	1a, 5.		5,992.6	WSW	WNW, 9.	WSW	WNW, 9.	WNW-WSW.
A vessel.	Los Angeles.	Vladivostok.	41 42 N.	142 18 E.	5	4p, 5.		5,995.3	S	W, 10.	WSW	W, 11.	S-W.
Aurora, Am. M. S.	do.	do.	42 30 N.	145 00 E.	5	4a, 5.		5,986.8	SE	SE, 8.	SE	SE, 9.	SE-S.
China Arrow, Am. S. S.	Vladivostok.	Los Angeles.	49 12 N.	165 00 W.	9	1p, 9.		91,004.4	SE	SE, 8.	SSE	SE, 8.	SE-SSE.
St. Mihil, U. S. A. T.	Dutch Harbor.	Seward.	54 06 N.	163 00 W.	9	7p, 9.		101,009.1	SE	SE, 9.	SE	SE, 9.	
Pioneer, U. S. C. & G. Survey.	San Francisco.	Dutch Harbor.	53 42 N.	164 06 W.	9	11a, 10.		101,000.0	SSE	SSW, 4.	SE	SE, 9.	None.
Sanyo Maru, Jap. M. S.	Yokohama.	San Francisco.	46 42 N.	176 06 E.	10	12p, 11.		101,006.1	S, 6.	SW, 6.	SSE	SW, 8.	NW-W.
Maliko, Am. S. S.	Honolulu.	do.	34 12 N.	133 06 W.	10	3p, 10.		11,999.3	NW	WNW, 7.	NW	NW, 9.	NW-W.
President Monroe, Am. S. S.	San Francisco.	Honolulu.	34 56 N.	131 40 W.	10	4p, 10.		11,991.9	SE	WSW, 9.	NNW	WSW, 9.	SE-W.
Steel Navigator, Am. S. S.	do.	do.	35 00 N.	131 30 W.	10	2p, 10.		11,990.9	SE	SSE, 7.	WNW	WSW, 9.	S-SSE-W.
Matsonia, Am. S. S.	do.	do.	35 30 N.	126 12 W.	10	6p, 10.		11,989.5	S	SW, 7.	NW	W, 9.	S-W.
John R. R. Hannay, U. S. A. T.	Pearl Harbor.	San Francisco.	37 21 N.	138 35 W.	10	2a, 11.		111,000.7	NW	NW, 8.	N	N, 8.	NW-N.
Makaweli, Am. S. S.	Honolulu.	do.	31 18 N.	140 12 W.	9	4a, 11.		121,012.9	NNW	NW, 7.	NW	NW, 8.	N-NW.
Pomona, Am. S. S.	Balboa.	Los Angeles.	14 33 N.	95 15 W.	12	4a, 13.		131,012.2	N	NNE, 7.	NE	NNE, 7.	N-NW.
W. S. Miller, Am. S. S.	Shanghai.	San Francisco.	24 00 N.	168 44 W.	16	2a, 17.		17,987.8	SSW	SSW, 9.	W	SSW, 9.	SSW-W.
Aurora, Am. M. S.	Vladivostok.	Los Angeles.	48 55 N.	169 20 W.	24	4a, 24.		241,000.7	SE	SE, 9.	SSW	SE, 9.	SE-S.
Pioneer, U. S. C. & G. Survey.	Surveying near Aleutian Islands.		52 18 N.	172 36 W.	24	1p, 24.		24,979.7	SE	SE, 5.	SW	SE, 9.	ENE-SSW.
Discoverer, U. S. C. & G. Survey.	Surveying near Alaska Peninsula.		55 06 N.	161 30 W.	24	6p, 24.		251,011.9	ESE	SSE, 7.	SSW	SSE, 8.	ESE-SSE.
Pioneer, U. S. C. & G. Survey.	Surveying near Aleutian Islands.		52 42 N.	172 30 W.	26	9p, 26.		27,996.6	ESE	S, 5.	SW	ESE, 11.	SE-SW.

<sup>1</sup> April.<sup>2</sup> Position approximate.

## WEATHER ON THE NORTH PACIFIC OCEAN

By WILLIS E. HURD

**Atmospheric pressure.**—The Aleutian Low filled in rapidly, following its considerable depth in April, and in May lay as a great shallow depression stretching across the Aleutian Islands and the adjoining waters of the northern Pacific and the Bering Sea, average pressure about 1,009 millibars (29.80 inches) to slightly lower. Throughout this region the barometer was about 1 to 3 millibars below the normal of the month.

Anticyclones lay over much of the east-central part of the ocean through most of the month, and on several days extended northward into the Gulf of Alaska. The average center lay over and to the eastward of Midway Island. At this station the mean pressure, 1,022.6 millibars (30.20 inches), was 5 millibars (0.15 inch) above the May normal.

Low pressure lay over the extreme southwest, where the continental depression from China was slowly spreading over the adjacent sea.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean May 1941, at selected stations

Station	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Millibars	Millibars	Millibars		Millibars	
Barrow	1,014.3	-4.7	1,030	11	1,000	31
Dutch Harbor	1,008.8	-1.7	1,024	21, 26	988	1
St. Paul	1,007.9	-3.3	1,027	10, 24, 27	990	13, 25
Kodiak	1,010.0	-0.5	1,025	21	992	4, 18
Juneau	1,012.9	-2.7	1,034	21	992	15
Tatoosh Island	1,015.2	-1.1	1,032	20	997	4
San Francisco	1,015.9	+0.3	1,024	5	1,003	10
Mazatlan	1,010.5	-0.3	1,013	16	1,006	18
Honolulu	1,015.9	-1.7	1,020	1	1,012	21
Midway Island	1,022.6	+5.0	1,028	21	1,016	2
Guam	1,010.8	-1.0	1,020	24	1,009	16
Manila	1,009.1	+1.0	1,014	4	1,006	19, 27
Hong Kong	1,009.5	+1.0	1,014	15, 16	1,003	26
Naha	1,012.5	+3.7	1,019	1	1,003	26
Titilima	1,015.1	+2.2	1,023	1, 2, 15	1,009	27
Petropavlovsk	1,008.9	-1.3	1,023	25	992	3

<sup>1</sup> And on other dates.

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.